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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,252

02/23/2005

Abraham Aharoni

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12/21/2010

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EXAMINER

BOR, HELENE CATHERINE

ART UNIT

PAPER NUMBER

3768

MAIL DATE

DELIVERY MODE

12/21/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/501,252	AHARONI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	HELENE BOR	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12,25,31-33,39,43,45,46,49,50,53,59,60,70-73,75-77,84,110,111,117 and 120 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Disposition of Claims: Claims pending in the application are 1-12,25,31-33,39,43,45,46,49,50,53,59,60,70-73,75-77,84,110,111,117 and 120.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :02/23/2005, 08/08/2005, 08/04/2008, 04/26/2010, 08/03/2010 & 11/17/2010.

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I in the reply filed on 10/05/2010 is acknowledged.
2. Claims 87-109 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/03/2010.
3. Applicant's election with traverse of Species 28 with related Species 8 and 10 in the reply filed on 10/05/2010 is acknowledged. The traversal is on the ground(s) that it is not reasonable to allow the election of only one species, when some of the 29 species listed are directed to very different aspects of the invention. The Examiner found the Applicant's argument with regards to related Species 8 and 10 convincing and therefore revokes the election of Species between Species 8, 10 and 28. However, the arguments regarding the election of the other Species is not is not found persuasive because search for all the "very different aspects" as the Applicant identified the claimed subject matter as would require different fields of search (e.g., searching different classes/subclasses or electronic resources, or employing different search strategies. For example signal reconstruction, a treatment device or an imaging device would require different searches in 600/437, 601/2 and 382/128. The requirement is still deemed proper and is therefore made FINAL.

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4. Claims 13-24, 26-30, 34-38, 40-42, 44, 47-48, 51-52, 54-58, 61-69, 74, 78-83, 85-109, 112-116, 118-119 & 121-125 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/05/2010.

5. The Applicant stated that DE2412690 failed to show lack of unity as failing to disclose a plurality of wavelengths. The Examiner contends that further evidence supporting the lack of unit is evidence in the rejection below.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim states, "said criteria". However, it is unclear what the criteria is or what of said criteria can be changed. Further the "said criteria" lacks antecedent basis within the claims.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-12, 25, 31-33, 39, 43, 45-46, 49-50, 53, 59-60, 70-73, 75-77, 84, 110-111, 117 & 120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuya et al. (US Patent No. 6,080,988) and further in view of Bennett et al. (5,944,687).

**Claim 1, 10-12, 25, 43, 46, 49-50, 53, 59-60, 70-73, 75-77, 84, 110-111, 117 & 120:**

Ishizuya teaches a source of electro-magnetic radiation that generates radiation having

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a plurality of different wavelengths (Col. 24, Line 65 - Col. 25, Line 6). Ishizuya teaches an electromagnetic waveguide coupled to the source wherein said source comprises a laser source (Col. 24, Line 53-54) and wherein said source comprises a spectral filter (Figure 5, Element 26). Ishizuya teaches wherein said absorbing region is a volume absorber that absorbs said radiation along its length in a direction of propagation of said radiation (Figure 1(a), Element 4) and a plurality of spaced apart absorbing regions (Figure 1(d), Element 5). Ishizuya teaches wherein said absorbing region does not fill a cross-section of said waveguide (Figure 1(d), Element 5). Ishizuya teaches wherein said absorbing region has a non-uniform cross-section (Figure 1(b), Element 4 & 5).

Ishizuya teaches a generator wherein said ultrasonic wave is operative to be steered in space by said generator without moving the absorbing region (Col. 3, Line 45-52).

Ishizuya teaches a controller operative to control said source and read out the signals (Figure 23, Element 141) and at least one absorbing region in said waveguide (Col. 13, Line 15-39). Although Ishizuya doesn't specifically mention the waveguide it would be inherent for the direction of the radiation as disclosed in Figure 5. Ishizuya teaches the conversion into displacement or heat and fails to teach the conversion to ultrasound.

However, Benett teaches converting incident electromagnetic radiation of fewer than all the plurality of generated wavelengths from the source into ultrasonic waves (Abstract) in order to deliver substantial optical power densities (Col. 2, Line 35-36).

It would have been obvious to one of ordinary skill in the art to modify the system of Ishizuya to include the conversion as taught by Benett in order to deliver substantial optical power densities (Col. 2, Line 35-36).

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**Claim 2:** Ishizuya teaches a generator, wherein at least one of the wavelengths not conveyed by the absorbing region into electromagnetic radiation is used for light illumination (Figure 19).

**Claim 3-9, 31-33, 39 & 45:** Ishizuya fails to teach a generator wherein said waveguide is formed into a guidewire. However, Benett teaches wherein said waveguide is formed into a guidewire and is adapted to be inserted into a body (Figure 3, Element 30 & 32) with an optical fiber (Figure 1, Element 10) with a non-acoustic optical fiber sensor (Figure 1, Element 12). Benett teaches wherein said absorbing region comprises a segment that is added to said fiber (Figure 1, Element 10 & 12) and doping of a core of said fiber (col. 6, Line 23). Benett teaches wherein said optical detector detects radiation that passes through said absorbing region unabsorbed and an optical detector coupled to said waveguide which generates a signal responsive to said acoustic field (Col. 7, Line 11-18).

It would have been obvious to one of ordinary skill in the art to modify the system of Ishizuya to include the conversion as taught by Benett in order to deliver substantial optical power densities (Col. 2, Line 35-36).

### ***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 5,298,903; US Patent No. 6,049,419 and US Patent No. 5,608,826.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE BOR whose telephone number is (571)272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./  
Examiner, Art Unit 3768

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768